

# AREVA's Jet Pump Flow Control Collar

Restricts Leakage & Provides Support to Mitigate Jet Pump Damage



AREVA's repair permanently addresses the largest contributor to flow induced vibration (FIV) issues on your existing jet pump assemblies

## Provides Sealing and Restraint

The BWR industry is currently facing jet pump challenges, due to leakage at the slip joint, causing instability and resulting in flow induced vibration. By addressing this root cause, AREVA BWR experts can deliver cost-effective technology that restricts leakage, provides lateral support, and allows for thermal expansion. A new enhanced design includes ~360 degree sealing capability around the slip joint without any modifications to the existing jet pump assembly.

## Addresses the Root Cause

A slip joint is needed to allow thermal growth between the jet pump assembly and the reactor vessel. Leakage through the slip joint causes flow induced vibration. The flow control collar incorporates a seal around the mixer assembly that restricts flow from the slip joint. The lower edge of the collar includes a feature that also restricts leakage to seal on the counter-bore of the diffuser assembly. Swing clamps are utilized for engaging the collar to the diffuser guide fins. These clamps provide holding force to secure the flow control collar to the diffuser. The combination of clamping forces from the seal and swing clamps provide lateral support to the slip joint assembly.

## Benefits

- Minimizes leakage
- Provides restraint
- Resolves all FIV issues from slip joint leakage
- Replaces the function of the slip joint clamp
- No modifications to jet pump
- Installation — one shift per jet pump pair



*Flow control collar seals slip joint assembly and provides lateral support while allowing thermal growth*



### Flow Control Collar Advantages

- The optimal solution that addresses the largest contributor of Flow Induced Vibration
- Fixes a problem not addressed by OEM aux wedges and slip joint clamps
- Minimizes potential leak paths to restrict flow
- Provides lateral support to tie the mixer to the diffuser while allowing thermal growth
- Simple installation without jet pump disassembly
- No loose parts — delivered as one assembly
- Life-of-plant repair
- Additional restraint features may be included
- Cleanest solution available for jet pump repair

### Testing Early 2016

- Vibration & leakage testing to validate performance
- Applicable to ALL BWR jet pump configurations



**AREVA solutions provide long-term asset protection and more efficient power output when you need it most — all from a single source**

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